

Trainees' reactions to training: an analysis of the factors affecting overall satisfaction with training

Antonio Giangreco^a, Antonio Sebastiano^b and Riccardo Peccei^{c*}

^a*Iéseg School of Management, Lille, France;* ^b*CREMS Centro di Ricerca in Economia e Management in Sanità, Università Carlo Cattaneo – LIUC, Castellanza (VA), Italy and IESEG School of Management;* ^c*King's College London, London, UK and Tilburg University, The Netherlands*

The study examines a relatively neglected, but important, aspect of the analysis and evaluation of training, namely trainees' immediate reaction to training. In particular, we focused on an analysis of the factors that affect participants' overall satisfaction with training. We first identified three key situational antecedents of training satisfaction, including trainees' perceptions of the efficiency and usefulness of the training, and their perceptions of trainer performance. Specific hypotheses relating each of these factors to training satisfaction were then developed and tested using data from a sample of about 3000 trainees from a range of Italian companies participating in a large-scale regionally-funded training programme involving over 300 different training courses. The results revealed that, although all three hypothesised antecedents were significantly positively related to training satisfaction, the perceived usefulness of training had the strongest effect. Importantly, the results also suggest the lack of any clear compensatory effects of the three antecedents on training satisfaction. Theoretical and policy implications of the findings are discussed.

Keywords: reaction evaluation; trainee perceptions; training evaluation; training satisfaction

Introduction

Training, as a management practice, is often viewed in very polarised terms by decision-makers in organisations. On the one hand, it is often seen as a universal panacea for all problems (Chaudron 1996; Gomez-Mejia, Balkin and Cardy 2004); on the other, it is viewed merely as a cost for the organisation, in terms of both time and money (Costa and Giannecchini 2005). However, regardless of the importance attached to training, the evaluation of training is increasingly seen as crucial given the resources that are commonly invested in training programmes by contemporary organisations. 'Nearly all employees receive some form of training during their careers; individuals rely on training to improve their current skills and to learn new skills' (Mathieu, Tannenbaum and Salas 1992, p. 828). In other words, training is a key human resource practice and, as such, clearly deserves and requires systematic monitoring and evaluation (Rebora 2005; Owens 2006). Such monitoring and evaluation is made all the more important by the fact that training is often outsourced (Dixon 1996; Gainey and Klaas 2003) and/or made compulsory for employees (Kidron 1977; Kabanoff and Bottger 1991), thereby requiring more careful justification based on a systematic assessment of its relative costs and benefits from the point of view of both individuals and the organisation. Consequently, although evaluating training can be difficult (see, for example, Lechner 2000; Patrick 2000), it is now generally agreed that it is necessary and that the main problem is identifying and applying the most effective techniques.

*Corresponding author. Email: riccardo.peccei@kcl.ac.uk

According to Kirkpatrick's (1959a, 1959b, 1960a, 1960b, 1967, 1996a) classic and very popular hierarchical model of training outcomes, there are four main levels at which training can be evaluated. These are in terms of participants' immediate reaction to the training itself (level 1 – reaction), what they learned from the training (level 2 – learning), the extent to which the new learning is transferred back to the job and results in new forms of behaviour at work (level 3 – behaviour), and the extent to which the new job behaviours result in improved individual and organisational performance (level 4 – results). Each level has a knock-on effect on the next, so that the satisfaction of the trainees influences their propensity to study, which, if it becomes real learning, can modify behaviour to the point of improving individual and organisational results, in terms of both quality and quantity.

The measurement of trainee satisfaction (reaction evaluation), which generally takes place at the end of a course, is by far the most popular and, very often, the only form of evaluation that is undertaken by organisations (Swanson and Sleezer 1987; Arthur, Bennett, Edens and Bell 2003). Nevertheless, there is a considerable gap between the incidence of this form of evaluation and the amount of research focused on the analysis of trainee reactions (Arthur et al. 2003). This discrepancy no doubt reflects the widespread view among management scholars that, at least in principle, the evaluation of outcomes (i.e. level 4 in Kirkpatrick's 1960b model) is the most important and appropriate basis for assessing the effectiveness of training. Clearly, as Kirkpatrick's (1967) model highlights, looking at whether trainees are satisfied with the training they received does not provide an in-depth understanding of the effectiveness or otherwise of the training. Nevertheless, examining trainees' reactions to the training, and trying to understand the factors that affect their reactions, can not only contribute to the more effective planning, design and management of training programmes, but is also central to an understanding of the eventual success or otherwise of the training. As such, a careful analysis of trainees' immediate reactions to training (i.e. a level 1 evaluation) can be of considerable value to organisational scholars and practitioners alike.

In this study, we seek to contribute to the analysis of training by focusing explicitly on level 1 of Kirkpatrick's (1959a) model, namely on employees' immediate reactions to training. The focus, in other words, is on a key aspect of the evaluation of training which, although of direct interest and concern to practitioners in organisations, has received little systematic research attention from management scholars (Arthur et al. 2003). It is not our intention to investigate the link between trainees' reactions to training and the other levels of the Kirkpatrick model. Rather, our aim is first to identify a number of key factors that are likely to affect trainees' overall reaction to training. On this basis we develop a number of hypotheses about the potential antecedents of trainee overall satisfaction with training which we then test using data from a large scale survey of participants in a major training programme for private sector companies financed by the Italian training agency Fondimpresa and carried out in 2005.

The rest of the article is organised as follows. The next section sets the context for the present analysis by providing a brief overview of the training programme analysed and the organisation that financed it. We then consider the notion of reaction evaluation and of overall trainee satisfaction with training, and outline the hypotheses tested in the study. In the second half of the paper, we first describe the data set and measures used in the analysis and then present the key findings. We conclude by discussing theoretical and policy implications.

Research context

Fondimpresa¹ is an Italian agency for in-service training set up at national level by a joint inter-professional fund, created by an agreement between *Confindustria* (the Confederation of Italian Industry) and the trade union confederations CGIL, CISL and UIL.² The main objective is to make training for development and innovation available, above all, to small and medium-sized

firms, which make up a great part of the Italian economy. Thanks to Fondimpresa, training schemes can be set up and financed at firm, inter-firm and sector level with the aim of increasing both companies' competitiveness and worker employability.

The Fund's start-up phase saw the launch of a series of regional-level training programmes called *PISTE* designed to fund innovative training in the development of management systems, human resources, process innovation, new technologies, and market relations. Our study deals with the part of the *PISTE* programme dedicated to companies situated in the province of Varese, which was run by a partnership between three training organisations and a university, all located in the same region. The training programme ran from March to December 2005. It comprised 307 training modules, equivalent to 7230 hours of training, and involved 208 companies and 3,053 workers for a total of 3698 participants.³

Of the 208 companies that participated in the *PISTE training programme*, 5.3% were micro-firms employing fewer than 10 people and with an annual turnover of under €2 million, 34.6% were small firms employing between 10 and 49 people with an annual turnover of less than €10 million, 42.3% were medium-sized firms employing between 50 and 250 people with an annual turnover of less than €50 million, and the remaining 17.8% were large firms employing over 250 people. This was by no means representative of the distribution of firms in the area since large companies were heavily over-represented in the training programme. Thus, 37 of the 46 large firms in the area participated in the programme, compared to 68 out of the 532 medium-sized firms, and only 83 out of the 66,791 small and micro firms respectively. This skewed participation is not surprising given that as companies become smaller, it becomes increasingly difficult to release workers for training. Moreover, the perception of the usefulness of training tends to increase with an increase in size of the company and/or the presence of an in-house personnel department (Rebora 2005).

A significant proportion (74.9%) of the 7230 hours of training provided was training specifically designed for a particular company context, in other words, where the participants came from the same organisation (i.e. internal or in-company courses). The remaining 25.1% involved inter-company training, where the course participants came from different companies (i.e. external or multi-company training courses).

As can be seen from Table 1, in so far as in-company training was concerned, approximately half of the course hours provided involved topics in the field of human resources management

Table 1. Hours of training per subject (in-company and multi-company courses).

<i>Course content/subjects</i>	<i>In-company courses</i>		<i>Multi-company courses</i>	
	<i>no. of hours</i>	<i>%</i>	<i>no. of hours</i>	<i>%</i>
Organisation of work, organisational behaviour and HRM	2680	49.5	376	20.7
Information systems	975	18.1	328	18.1
Foreign languages	690	12.7	312	17.2
Administration, finance and control	288	5.3	256	14.1
Textiles	192	3.5	172	9.5
Production and logistics	104	1.9	104	5.7
Communications	118	2.2	80	4.4
Mechanical engineering	200	3.7	48	2.7
Environment and quality	16	0.3	48	2.7
Electronics	—	—	28	1.5
Marketing and sales	32	0.6	24	1.3
Purchasing	—	—	24	1.3
Health and safety	120	2.2	15	0.8
Total	5415	100.00	1815	100.00

(49.5%). Information technology and foreign languages took up 18.1 and 12.7% of the training hours respectively, with the remainder of the courses covering a range of technical and managerial topics. In terms of inter-company training, however, apart from the growing trend in foreign languages (17.2%) and IT skills (18.1%), most of the hours were more evenly distributed among managerial skills while, similarly to in-company courses, there was practically no emphasis on technical training.

The importance of reaction evaluation

Kirkpatrick's (1959a, 1959b, 1960a, 1960b, 1967, 1996a) *hierarchical model of training outcomes* was a landmark contribution in this field. The model inspired most subsequent training evaluation models proposed in the literature (e.g. Warr, Bird and Rackham 1970; Hamblin 1974; Phillips 1993; Kaufman, Keller and Watkins 1995; Molenda, Pershing and Reigeluth 1996), countless publications oriented to practitioners (e.g. Kelley, Orgel and Baer 1984; Swanson and Sleezer 1987; Talbot 1992; Shelton and Alliger 1993; Mann and Roberston 1996; Kidder and Rouiller 1997; Albernathy 1999; Toplis 2001; Tyler 2002), and many contributions to the debate (e.g. Noe 1986; Plant and Ryan 1992; Olsen 1998; Warr, Allan and Birdi 1999; Blanchard, Thacker and Way 2000; Tracey, Hinkin, Tannenbaum and Mathieu 2001), including a few criticisms (e.g. Clement 1982; Alliger and Janak 1989; Tannenbaum and Woods 1992; Bates 2004; Brown 2005), and a muscular confrontation between Holton (1996) and Kirkpatrick (1996b).

The literature on training evaluation is highly consistent with respect to two basic conclusions. First, companies are not generally capable of fully evaluating training programmes (Plant and Ryan 1992; Mann and Roberston 1996), thereby highlighting a major gap between theoretical recommendations in the academic literature and real application in industry and business (Swanson and Sleezer 1987). As noted by Plant and Ryan (1992, p. 23), 'within the industrial or commercial setting, time and financial resources severely limit the possibility of evaluating benefit beyond (Kirkpatrick's) level 1' (Plant and Ryan 1992, p. 23). Second, as emphasised by Olsen (1998, p. 61), participant reaction is still the most commonly evaluated dimension of training in organisations – 'The transfer component did not appear to have received as much attention since most organisations were (apparently) looking primarily at reaction.' Estimates of the proportion of companies doing full training evaluations vary considerably from one study to the next but tend, on the whole, to be rather low: 31% according to Olsen (1998) 20% according to Shelton and Alliger (1993), 7% as estimated by Van Buren and Erskine (2002), only 2% as indicated by Lee and Pershing (2002), and none according to Plant and Ryan (1992).

Indeed, the field of training evaluation shows an interesting dichotomy. On the one hand, academics tend to emphasise the need to examine all four of Kirkpatrick's (1967) evaluation levels, while organisations, on the other, seldom try to apply the full training evaluation model in practice. However, because of the emphasis on full training evaluation, research in this area has tended to downgrade the importance of level 1 evaluation. Thus, in their broad literature review of training evaluation results, Alliger and Janak (1989) noted that only three out of 203 empirical studies examined all four levels. On the other hand, the number of studies dealing explicitly with level 1 was also very limited: 11 out of 203 focused on level 1 only, and a further 41 looked at level 1 as well as at one other level (Alliger and Janak 1989). In other words, although reaction evaluation is very often the only aspect considered by most companies, the importance attached by academics to full evaluation and, hence, the reluctance of journals to publish studies focusing purely or primarily on reaction evaluation, has resulted in a paucity of published research on this particular area of training evaluation (Arthur et al. 2003).

In this respect, reaction evaluation is to be viewed in the same way as any other kind of feedback related to a specific aim (Tannenbaum and Woods 1992; Mann and Robertson 1996; Blanchard et al. 2000), without overestimating its significance. Indeed, Kirkpatrick (1967, p. 88) was the first to highlight the intrinsic limitations of a level 1 evaluation stating that 'reaction may best be defined as how well trainees liked a particular training programme. Evaluating in terms of reaction is the same as measuring the feelings of the conferees. It is important to emphasise that it does not include a measurement of any learning that takes place', since it is essential that the four dimensions are isolated and treated one by one.

At the same time, though, the importance of reaction evaluation should not be underestimated for two reasons. First, although there is no systematic evidence that positive reactions to training are necessarily associated with more positive level 2 or level 3 outcomes, such as better learning and/or more effective transfer of learning to the job (Clement 1982; Alliger and Janak 1989; Arthur et al. 2003), it would be rash to assume that positive training experiences have absolutely no beneficial effect on trainees. Thus, as suggested by Meyer and Allen (1997) and by Rhoades and Eisenberger (2002), positive training experiences may well have a beneficial impact on a number of important employee attitudes and behaviours including, for example, their level of job motivation, organisational commitment and perceived organisational support. Second, gaining a better understanding of reaction evaluations can help organisations identify particular problems or weaknesses with their current training and, hence, become a basis for improving their future training provision (Goldstein 1993; Mann and Robertson 1996; Tannenbaum and Woods 1992). In other words, trainees' reactions to training, and the factors that affect these reactions, are important to examine in their own right, quite apart from the impact that such reactions may or may not have on subsequent levels in the Kirkpatrick (1967) model.

Central to the evaluation of trainees' immediate reactions to training is an analysis of the extent of their overall satisfaction with the training they received and of the factors that help to shape their assessment of the training. More specifically, following Alliger and Janak (1989), overall satisfaction with training can be viewed as a global attitudinal construct that captures individuals' general attitude towards and evaluation of the training they received. In turn, there are a number of possible determinants of training satisfaction that have been identified in the literature. Particularly important from the present point of view are a number of situational factors related to the training itself that are under the direct control of the organisation. According to Kidder and Rouiller (1997) these include, for example, the content of the training, the materials used, and instructor performance. Other researchers emphasise slightly different and/or additional antecedents, such as the actual organisation of the training (Lee and Pershing 2002). Here we focus on three key factors that most researchers consider to be central to an understanding of overall trainee satisfaction with training. These include trainees' perceptions of the usefulness and efficiency of the training, as well as their perceptions of trainer performance. These three factors are described more fully below.

Research hypotheses

The first factor – perceived efficiency of training – relates primarily to the organisation and the mode of operation of the course. In particular, it refers to an evaluation on the part of trainees of various aspects regarding the physical location and administration of the course (Lee and Pershing 2002). These may include, for example, elements of comfort and practicality, such as whether the training venue can be easily reached, whether it has suitable areas equipped for coffee-breaks, whether the classroom is of a suitable size, whether it is adequately lit and

properly heated or air-conditioned, whether the sound-system is working, the furniture is comfortable, and the teaching aids (white board, computer, projector, flip chart) are adequate for the purpose of the training being carried out (Lee and Pershing 2002). Furthermore, course planning in terms of the number of sessions provided and their scheduling in relation to the topics dealt with in the classroom and trainees' work commitments are also important here (Amietta 2000), as are the resources made available to trainees including, for example, the quantity and quality of the teaching materials used (Kidder and Rouiller 1997). As often noted by practitioners, although some of these elements may, at first sight, appear to be of only secondary importance, in practice, their impact on trainee reactions may be quite substantial (Kidder and Rouiller 1997). Inadequate facilities, poor teaching materials or overly frequent lessons may, for example, have a profound negative impact on trainees' overall evaluation of the course. This is in line with existing research in the area that suggests that training administration and delivery can influence reactions (North, Strain and Abbott 2000; Towler and Dipboye 2001). We capture these arguments in the first of our study hypotheses.

Hypothesis 1: The perceived efficiency of training will be positively related to trainees' overall satisfaction with training. The more individuals perceive that the training is effectively organised and managed, the greater their level of overall satisfaction with the training will be.

Having an effectively managed and organised course, however, by no means guarantees high levels of trainee satisfaction. Trainee reactions are also importantly influenced by the perceived usefulness of the training (Warr and Bunce 1995; Warr et al. 1999). There are two main elements involved here. The first concerns the extent to which participants perceive the training as providing them with the knowledge and skills necessary to perform well on their job and/or improve their general efficacy within the organisation (Webster and Martocchio 1995). The second element concerns individuals' personal growth and development and the extent to which participants perceive the training as contributing to their longer term career prospects and opportunities, both within and outside the organisation. In other words, the first element is more concerned with trainees' present needs within their current organisation, while the second concerns their longer term needs and skills that can also be transferable to other organisations (Lipari 2002). More generally, as noted by Noe (1986, p. 73), 'it is important that the trainees believe that program participation and mastery of content are related to the attainment of desired outcomes such as prestige, horizontal and vertical career movement, enhancement of self confidence, or salary increases'. Moreover, trainees' evaluation of the usefulness of the course often is also based on an assessment of the balance between practical and theoretical aspects of the training. Perceptions of an imbalance, such as when course content is thought to be too theoretically rather than practically oriented, can have a significant negative impact on overall perceptions of the usefulness of the training and, therefore, ultimately negatively affect trainee overall satisfaction with the training (Sebastiano and Bellet 2005). On this basis, therefore, we propose the following hypothesis.

Hypothesis 2: The perceived usefulness of training will be positively related to trainees' overall satisfaction with training. The more useful individuals perceive the training to be, the greater their level of overall satisfaction with the training will be.

The third situational factor likely to influence trainee reactions to training relates to participants' perceptions of trainer performance. As noted by Steiner, Dobbins and Trahan (1991, p. 23), 'trainees should perceive trainer behaviours which are directed at the factor

to which they attribute their training performance as more appropriate than trainer actions directed at other factors'. More specifically, trainer performance covers aspects of both content and process (Kirkpatrick 1967). Content issues include, for example, perceived trainer mastery of topics. Typical process elements, on the other hand, include choice of appropriate teaching styles and methodology, such as use of teacher directed and group activities, role plays and case studies, as well as effective time management (Morris 1984). This is the basis for our third study hypothesis.

Hypothesis 3: Perceived trainer performance will be positively related to trainees' overall satisfaction with training. The more highly individuals rate the performance of trainers, the greater their level of overall satisfaction with the training will be.

Although all three of the situational factors identified above can be expected to affect trainee reaction, a number of scholars have assigned a privileged position to trainer performance as an antecedent of participant satisfaction with training. Kirkpatrick (1967, p. 91), for example, commenting on the evaluation of in-house conferences, suggested that, 'sometimes the staff men felt that the conference leader's personality made such an impression on the group that he received a very high rating. In other sessions, the coordinator felt that the conference leader received a low rating because he did not have a dynamic personality'. More recently, Modiano (1994) and Kidder and Roullier (1997) have also emphasised the key role played by trainer performance in influencing trainees' immediate reaction to training. There are two main arguments that can usefully be distinguished in this context. The first is what might be termed a dominant effect argument. This is the idea that of the three main situational antecedents of overall satisfaction with training identified above, trainer performance is the most important. This argument reflects the widespread feeling among training operators and users that when a teacher has a dynamic personality, not only will he or she maximise performance in terms of the content taught, but also participants' perception of that performance will become the determining element in the final course evaluation (Quaglino 2003). We capture this possibility in the following hypothesis.

Hypothesis 4: Perceived trainer performance will be more strongly positively related to trainees' overall satisfaction with training than either the perceived efficiency, or the perceived usefulness of the training.

The second is a more complex moderator argument. Central to this argument is the idea that perceived trainer performance may help to moderate the impact that participants' perceptions of the efficiency and usefulness of the training are likely to have on their immediate overall evaluation of the training itself (Steiner et al. 1991). In particular, a positive perception of trainer performance may help to compensate for training that is seen by participants as being less directly useful and/or well organised than it might be (Morris 1984). This possibility is captured in the following moderator hypothesis.

Hypothesis 5: Perceived trainer performance will moderate the relationship between the perceived efficiency and usefulness of training on the one hand, and overall trainee satisfaction with training on the other. The perceived efficiency and usefulness of training will have a stronger positive effect on training satisfaction when trainees perceive trainer performance to be high.

Below we test these hypotheses using data from employees who participated in the extensive Fondimpresa-financed training programme in Italy.

Methods

Sample

The survey was carried out over the same period as the training programme, from March to December 2005. The research instrument used for the survey was a confidential self-completion questionnaire that guaranteed the anonymity of respondents. The questionnaire took the form of a 'happy sheet', 'smile sheet', or 'reactionnaire' (Lee and Pershing 2002), which is traditionally distributed to trainees at the end of a training course in order to record their level of satisfaction with the course.

Of the 3698 employees who participated in the training programme set up by Fondimpresa 2697 returned completed questionnaires, for a response rate of 72.9%. The study sample consisted of 63.6% men and 36.7% women; about 75% of respondents were in the 31–40 or 41–50 age brackets; the majority (50.5%) had a high school diploma, while 18.5% were graduates. In terms of job categories 15.4% of respondents were blue-collar workers, 73.3% were white-collar workers, and 11.3% were middle managers or higher level non-executive managers.

Measures

The four main variables used in the present analysis (*overall satisfaction with training, perceived training efficiency, perceived usefulness of training, and perceived trainer performance*) were measured using scales developed specifically for this study, on the basis of Fondimpresa's compulsory evaluation system guidelines. Responses to all questionnaire items used to construct the scales in the analysis were scored on a five-point Likert scale measuring respondents' agreement or disagreement with the item in question (from 1 = strongly disagree to 5 = strongly agree). The items used to construct the scales are summarised in Table 2.

Dependent variable

The dependent variable, namely, *overall satisfaction with training* (OST), was measured with a single item designed to assess participants' global satisfaction with the training they received, based on the premise that a single item scale is an acceptable measure of an overall construct (Wanous and Reichers 1997).

Independent variables

Perceived training efficiency (PTE) was measured with three questionnaire items designed to tap participants' evaluation of the organisational and administrative aspects of the training courses they attended. The items involved covered respondents' evaluation of the location of the training, of the way the course was structured in terms of frequency and timing of sessions, and of the teaching aids and materials used for the course including, for example, books, slides, case studies and reports.

The *perceived usefulness of training* (PUT) was measured with five items dealing with participants' evaluation of various aspects of the content of the training course in which they took part. These included, for example, the extent to which the content of the course matched its objectives, the perceived usefulness of the topics covered in terms of respondents' current learning needs, as well as their future career development, the relevance of the training material to immediate job requirements, and the perceived balance between the theoretical and practical coverage of the training.

Perceived trainer performance (PTP) was measured with five items designed to tap participants' perception of trainers' mastery of topics and delivery performance including, for

Table 2. Factor analysis results.

Items	Factors		
	PTP	PUT	PTE
Perceived trainer performance (PTP)			
1. Trainer's capability to deliver topics	0.87		
2. Trainer's capability to involve participants	0.82		
3. Trainer's capability to manage time	0.78		
4. Trainer's knowledge of topics	0.78		
5. Didactic methodologies used	0.61		
Perceived usefulness of training (PUT)			
1. Usefulness of topics in terms of immediate work responsibilities		0.81	
2. Relevance of topics to future career development		0.75	
3. Relevance of topics in relation to individual learning needs		0.66	
4. Consistency with declared objectives		0.61	
5. Balance between theory and practice		0.58	
Perceived efficiency of training (PET)			
1. Validity of the teaching materials used			0.74
2. Course organisation (premises, classroom, and tools)			0.74
3. Course planning (frequency and timing)			0.70

Note: Only factor loadings above .40 are reported in the table. KMO = .91.

example, their capacity to involve the audience, their capacity to manage time, and the appropriateness of the teaching style and method used.

As shown in Table 3, factor analysis (principal components with varimax rotation) of the 13 items yielded three factors with all items, as expected, loading on their respective factors. Once scaled, the factors showed acceptable levels of internal reliability, with coefficients alpha of 0.88, 0.80 and 0.66 for *perceived trainer performance*, *perceived usefulness of training* and *perceived training efficiency* respectively. At 0.66, the PTE internal reliability coefficient was slightly below the 0.70 threshold recommended by Nunnally (1970). However, given that this is only a three-item scale and that coefficient alpha tends to increase with the number of items in the scale (Cortina 1993; Field 2005), the present value, although not ideal, is acceptable.

Control variables

Although as part of the study we collected demographic data on respondents, because of the need to guarantee the anonymity of participants, we were not able to match the demographic data to individual questionnaire responses. As a result, we were not able to control for individual demographic characteristics in the main regression analysis. As part of the analysis, however, we

Table 3. Means, standard deviations and correlations for main study variables.

Variable	Mean	SD	OST	PTE	PUT
Overall satisfaction with training (OST)	4.11	0.75			
Perceived training efficiency (PTE)	3.73	0.72	0.50		
Perceived usefulness of training (PUT)	3.83	0.63	0.66	0.49	
Perceived trainer performance (PTP)	4.37	0.58	0.64	0.47	0.56

Note: All correlations significant at $p < .001$.

controlled for various characteristics of the training courses on offer that might affect both respondents' perceptions and overall satisfaction with the training. The variables in question included the type of course attended by respondents (1 = in-company course, 2 = multi-company course), its level of difficulty (1 = basic, 2 = intermediate, 3 = advanced, 4 = expert), the subject matter or content involved (1 = technical, 2 = managerial, 3 = behavioural/relational), and the specificity of the course in terms of sector (1 = sector specific; 2 = non-sector specific), and target audience (1 = single occupational group, 2 = multiple occupational groups).

The study hypotheses were tested using ordinary least square (OLS) multiple regressions on the set of variables outlined above.

Results

Descriptive results

Means, standard deviations and correlations for the key dependent and independent variables in the study are shown in Table 3. Descriptive statistics for the control variables are available from the authors.

As can be seen, participants, on average, exhibited a high level of overall satisfaction with the training they received (mean = 4.11, SD = .75), with only 18.1% of respondents scoring below the midpoint of the overall satisfaction with training scale. The average score on the measure of perceived training efficiency was less positive, but still above the midpoint on the scale (mean = 3.73, SD = .72). The same applies with respect to the perceived usefulness of training (mean = 3.83, SD = .63). In contrast, the average score on the trainer performance variable was significantly higher (mean = 4.37, SD = .58), indicating an overall tendency for trainees to rate trainer performance most positively, followed by their assessment of the usefulness and efficiency of the training respectively.

Table 3 also shows that, as expected, the dependent overall satisfaction with training variable was positively correlated with all three of its proposed situational antecedents. All three antecedents were also positively related to each other, with a mean correlation of 0.50 between the three variables. Separate analysis of the data showed that the moderate intercorrelations between the three independent variables did not pose any problems of multicollinearity in the main analysis. Specifically, the variance inflation factor (VIF) diagnosis showed a tolerance statistic (1/VIF) of 0.69 for PTE, 0.61 for PUT and 0.63 for PTP, indicating the absence of a multicollinearity problem even if Field's more severe (2005) parameter threshold of 0.10 is used.

Tests of hypotheses

The main results of the regression analysis used to test hypotheses 1, 2, 3 and 4 are shown in Table 4. As can be seen, the results provided support to hypotheses 1, 2 and 3. As hypothesised, perceived training efficiency, the perceived usefulness of training and perceived trainer performance were all significantly positively related to overall satisfaction with training (betas = 0.16, $p < .001$; 0.47, $p < .001$ and 0.27, $p < .001$ respectively). Hypothesis 4, on the other hand, did not find support in the analysis since the perceived usefulness of training had a significantly stronger effect on the dependent variable than did perceived trainer performance. Overall, however, the model showed a significant explanatory capacity with the three hypothesised antecedents, together with the control variables, accounting for over half the variance in trainee satisfaction with training (adjusted R square = 0.57. $p < .001$).

Table 4. Test of Hypotheses 1–4: regression analysis results.

<i>Independent variables</i>	<i>Overall satisfaction with training</i>
1. Type of course (multi-company)	– .01
2. Level of difficulty of course	– .02
3. Course content (behavioural/relational)	.04**
4. Specificity of training (non-sector specific)	.00
5. Target audience (multi-group)	.01
6. Perceived training efficiency	.16***
7. Perceived usefulness of training	.47***
8. Perceived trainer performance	.27***
Adjusted R square	.57***
Number of observations	2691

Note: Figures in table are standardised beta coefficients. * $p < .05$; ** $p < .01$; *** $p < .001$.

Of the controls included in the analysis, only the type of training content variable was significantly related to overall trainee satisfaction ($\beta = .04$, $p < .01$), with courses that dealt with ‘soft’ behavioural and relational topics tending to be associated with higher satisfaction scores than courses that dealt with ‘hard’ managerial and technical topics.

Finally, Hypothesis 5 suggests that perceived trainer performance moderates the relationship between perceived training usefulness and efficiency on the one hand, and overall training satisfaction on the other. To test this moderator hypothesis two multiplicative variables were constructed designed to capture the ‘perceived usefulness of training x perceived trainer performance’ interaction, and the ‘perceived efficiency of training x perceived trainer performance’ interaction respectively. To reduce multicollinearity all the variables used to construct the interaction terms were first mean-centred (Jaccard, Choi and Turrissi 1990). The two interaction terms were then added to the set of original variables shown in Table 1 as predictors of overall satisfaction with training. Neither of the two interaction terms attained significance in the analysis, thereby failing to support Hypothesis 5 and the idea that perceived trainer performance moderates the relationship between the two other antecedents and satisfaction with training.

Discussion

There is considerable debate in the literature as to whether it is possible to evaluate the impact of training in organisations in any meaningful or systematic way (e.g. Warr et al. 1999; Holton 1996; Bates 2004; Brown 2005). Practitioners have, for the most part, tended to focus on the first level of Kirkpatrick’s (1959a) hierarchical model of training evaluation, namely, on the level of reaction evaluation (Lee and Pershing 2002; Van Buren and Erskine 2002). Academics, on the other hand, have tended to emphasise the importance of moving the analysis beyond level 1 to the higher levels of Kirkpatrick’s model (Carnevale, Gainer and Villet 1990; Lee and Pershing 2002). As a result, relatively little systematic academic research has been carried out focusing explicitly on trainee reactions to training (Alliger and Janak 1989; Arthur et al. 2003) and, in particular, on the factors that affect participant’s overall satisfaction with training, even though such reactions may have an important effect on employee attitudes and behaviour at work (Meyer and Allen 1997; Rhoades and Eisenberger 2002). The present study sought to contribute to the analysis and evaluation of training by looking explicitly at the situational factors that may affect participants’ reaction to training. In particular, we focused on three key potential antecedents of training satisfaction, namely, trainees’ perceptions of the efficiency and usefulness of the training they received, and their perceptions of trainers’ performance.

Hypotheses relating each of these antecedents to training satisfaction were systematically tested using a large and diverse sample of trainees from a wide range of organisation that participated in a major regionally funded training programme in Italy.

Theoretical and policy implications

The results of the study direct attention to a number of key analytical points, as well as to important policy considerations. The first point concerns the hypothesised antecedents of training satisfaction. Our study indicates that, although interrelated, perceived training effectiveness, the perceived usefulness of training, and perceived trainer performance are separate and distinct constructs in their own right. Second, our results show that, as hypothesised, all three situational antecedents examined have a significant impact on satisfaction with training. Taken together, the three factors account for a substantial proportion of the variance in trainee satisfaction with training. In other words, our results confirm that trainees' immediate reaction to training and, in particular, their overall sense of satisfaction with given courses is, to an important extent, affected by how well they think the training was organised, how well they think trainers performed, and how useful they think the course is likely to be for their work and for their own personal development.

Our results suggest, however, that these three factors do not all have an equal effect on training satisfaction. The third main point to emerge from the analysis in fact is that, contrary to expectations, and to a widely held view amongst practitioners (Quaglino 2003), perceived trainer performance is not necessarily the most important predictor of overall training satisfaction. Rather, our results indicate that, in order of importance, the perceived usefulness of training is the strongest predictor of training satisfaction, followed by perceived trainer performance and the perceived efficiency of training respectively.

The fourth key point concerns the failure of our results to provide support for the moderating effect of perceived trainer performance. In turn, this suggests that there are unlikely to be any clear compensatory effects between the three antecedents of training satisfaction. Specifically, our results suggest that, contrary to what is often assumed both in the literature and by practitioners (Kirkpatrick 1967), good trainer performance cannot necessarily compensate for deficiencies in course organisation and/or course content (House and Tosi 1963). By the same token, however, good course organisation and/or content cannot necessarily compensate for poor trainer performance and for the poor delivery of training more generally. In other words, our study suggests that in order to ensure high levels of trainee satisfaction with training, organisations need to get all three elements of the training experience right.

From a more practical perspective, therefore, our results also have a number of important implications for management in organisations. One overall implication concerns the need to understand properly the importance of level 1 of Kirkpatrick's (1959a) training evaluation model and, in particular, of the factors that help to shape trainees' immediate reactions to training. And this, in turn, directs attention to two further points. First, is the need to focus not only on trainer performance, but also on the organisation of training and, above all, on course content in order to ensure high levels of trainee satisfaction with training. Getting all three elements of the training experience right may prove quite challenging for many organisations. Our results suggest, however, that systematic monitoring of all three elements is crucial to a proper understanding and evaluation of the potential effectiveness of training. Such monitoring is likely to be all the more important as organisations move towards greater subcontracting of training to outside agencies (Dixon 1996; Gainey and Klass 2003). Second, our results help to reinforce a point that has been made before in the training literature,

namely that for course content to be perceived as useful by participants, it has to be explicitly designed to take account of their interests and needs, including longer term needs for personal and professional growth and development that may go beyond immediate job requirements (Quaglino 2003; Bates 2004).

Study limitations and future research

The results of the present study need to be treated with some caution given some potential limitations of the research. First, although all scales exhibited acceptable psychometric properties, the use of self-assessment measures can give rise to possible problems of common method variance that may inflate observed relationships between variables. Second, although we controlled for a variety of course features in the analysis, for reasons of confidentiality we were not able to control for demographic variables that may influence trainees' experience and evaluation of the training they received, such as their age, gender, tenure and hierarchical position. Third, although the use of data collected at the end of a training programme is acceptable for examining immediate reactions to the training, the cross-sectional nature of the data involved prevented the rigorous testing of the causal relationship between the dependent and independent variables of interest in the study. And finally, although the study was based on a large and varied sample of companies, trainees and type of training courses, the extent to which the results can be generalised to other cultural and institutional contexts remains open to question.

To address the above limitations, future research should seek to examine the extent to which the present results reproduce more widely in different countries and organisations. Where possible the research should cover a full set of individual controls and use longitudinal designs involving the collection of perceptual and evaluative data on multiple occasions during the lifetime of given training programmes. Such longitudinal data collection is particularly important in the case of complex training interventions involving trainee attendance on multiple courses over a protracted period of time.

Future contributions should also seek to extend and develop the present analysis in two main ways. First is by seeking to identify other key antecedents of satisfaction with training apart from the three main situational factors examined in the present study. This may, for example, involve looking in greater detail at course content features and at learning and teaching styles, including issues relating to the complexity and mode of delivery of the training. It would also involve looking at the extent to which individuals' experiences of and reactions to training are affected by their prior work expectations, attitudes and orientations, such as by their career expectations and by their prior levels of job satisfaction, organisational commitment and work involvement. And second, future research could usefully take the present analysis further by extending the focus of the evaluation from the reaction level to the next two levels of Kirkpatrick's (1967) model and look explicitly at the link between training satisfaction, learning and the subsequent adoption of new forms of behaviour at work.

Conclusions

The present study sought to contribute to the analysis and evaluation of training by focusing on an important but relatively neglected area of research. This is the analysis of trainees' immediate reaction to training and, in particular, of the factors that affect their overall level of satisfaction with the training they have received. We focused on three key situational antecedents of training satisfaction, namely, trainees' perception of the usefulness and efficiency of the training, and their perception of trainer performance. The results of the analysis, based on data from a large sample of trainees from a range of Italian companies, indicate that, as hypothesised, all three

factors are significantly positively related to satisfaction with training. The perceived usefulness of training would appear, however, to have a stronger effect on satisfaction than either of the other two factors. Moreover, no significant moderator effects were detected in the data, suggesting the lack of any clear compensatory effects of the three factors on training satisfaction. As such, the study has important analytical, as well as practical implications and, we believe, provides a useful point of departure for further research in the area.

Notes

1. The information in this section is based on official *Fondimpresa* documents.
2. Ministerial Decree of 28 November 2002.
3. The difference between the number of workers trained and participants is accounted for by the fact that some workers took part in several courses.

References

- Albernathy, D.J. (1999), 'Thinking Outside the Evaluation Box,' *Training & Development*, 53, 2, 18–24.
- Alliger, G.M., and Janak, E.A. (1989), 'Kirkpatrick's Levels of Training Criteria: Thirty Years Later,' *Personnel Psychology*, 42, 331–342.
- Amietta, P. (2000), *I Luoghi dell'Apprendimento: Metodi, Strumenti e Casi di Eccellenza*, Milan: FrancoAngeli.
- Arthur, W.J., Bennett, W., Edens, P.S., and Bell, S.T. (2003), 'Effectiveness of Training in Organisations: A Meta-analysis of Design and Evaluation Features,' *Journal of Applied Psychology*, 88, 2, 234–245.
- Bates, R. (2004), 'A Critical Analysis of Evaluation Practice: The Kirkpatrick Model and the Principle of Beneficence,' *Evaluation and Program Planning*, 27, 3, 341–348.
- Blanchard, N.P., Thacker, J.W., and Way, S.A. (2000), 'Training Evaluation: Perspectives and Evidence from Canada,' *International Journal of Training and Development*, 4, 4, 295–304.
- Brown, K.G. (2005), 'An Examination of the Structure and Nomological Network of Trainee Reactions: A Closer Look at "Smile Sheets",' *Journal of Applied Psychology*, 90, 5, 991–1001.
- Carnevale, A.P., Gainer, L.J., and Villet, J. (1990), *Training in America: the Organization and Strategic Role of Training*, San Francisco, CA: Jossey-Bass.
- Clement, R.W. (1982), 'Testing the Hierarchy Theory of Training Evaluation: An Expanded Role for Trainee Reactions,' *Public Personnel Management Journal*, 176–184.
- Cortina, J.M. (1993), 'What Is Coefficient Alpha? An Examination of Theory and Applications,' *Journal of Applied Psychology*, 78, 1, 98–104.
- Costa, G., and Gianecchini, M. (2005), *Risorse Umane*, Milan: McGraw-Hill.
- Chaudron, D. (1996), 'Training Effectiveness – Don't Overload the Horse,' *HR Focus*, January, 10–11.
- Dixon, N.M. (1996), 'New Routes to Evaluation,' *Training & Development*, May, 82–85.
- Field, A. (2005), *Discovering Statistics Using SPSS*, London: Sage Publications.
- Gainey, T.W., and Klaas, B.S. (2003), 'The Outsourcing of Training and Development: Factors Impacting Client Satisfaction,' *Journal of Management*, 29, 2, 207–229.
- Goldstein, I.L. (1993), *Training in Organizations*, Pacific Grove, CA: Brooks/Cole.
- Gomez-Mejia, L.R., Balkin, D.B., and Cardy, R.L. (2004), *Managing Human Resources*, Upper Saddle River, NJ: Pearson Prentice Hall.
- Hamblin, A.C. (1974), *Evaluation and Control of Training*, New York: McGraw-Hill.
- Holton, F.H. (1996), 'The Flawed Four-level Evaluation Model,' *Human Resources Development Quarterly*, 7, 1, 5–20.
- House, R.J., and Tosi, H. (1963), 'An Experimental Evaluation of a Management Training Program,' *The Academy of Management Journal*, 6, 4, 303–315.
- Jaccard, J., Choi, K.W., and Turrissi, R. (1990), 'The Detection and Interpretation of Interaction Effects between Continuous Variables in Multiple Regression,' *Multivariate Behavioural Research*, 25, 4, 467–478.
- Kabanoff, B., and Bottger, P. (1991), 'Effectiveness of Creativity Training and Its Relation to Selected Personality Factors,' *Journal of Organizational Behavior*, 12, 3, 235–248.
- Kaufman, R., Keller, J., and Watkins, R. (1995), 'What Works and What Doesn't: Evaluation Beyond Kirkpatrick,' *Performance & Instructions*, 35, 2, 8–12.

- Kelley, I., Orgel, R.F., and Baer, D.M. (1984), 'Evaluation: The Bottom Line is Closer than You Think,' *Training and Development Journal*, August, 32–37.
- Kidder, P.J., and Rouiller, J.Z. (1997), 'Evaluating the Success of a Large-scale Training Effort,' *National Productivity Review*, Spring, 79–89.
- Kidron, A.G. (1977), 'The Effectiveness of Experiential Methods in Training and Education: The Case of Role Playing,' *The Academy of Management Review*, 2, 3, 490–495.
- Kirkpatrick, D.L. (1959a), 'Techniques for Evaluating Training Programs: Part 1 – Reactions,' *Journal of ASTD*, 13, 11, 3–9.
- Kirkpatrick, D.L. (1959b), 'Techniques for Evaluating Training Programs: Part 2 – Learning,' *Journal of ASTD*, 13, 12, 21–26.
- Kirkpatrick, D.L. (1960a), 'Techniques for Evaluating Training Programs: Part 3 – Behavior,' *Journal of ASTD*, 14, 1, 13–18.
- Kirkpatrick, D.L. (1960b), 'Techniques for Evaluating Training Programs: Part 4 – Results,' *Journal of ASTD*, 14, 12, 28–32.
- Kirkpatrick, D.L. (1967), 'Evaluation of Training,' in *Training and Development Handbook*, eds. R.L. Craig and L.R. Bittel, New York: McGraw-Hill, pp. 87–112.
- Kirkpatrick, D.L. (1996a), 'Great Ideas Revisited,' *Training and Development*, 50, 54–59.
- Kirkpatrick, D.L. (1996b), 'Invited Reaction: Reaction to Holton Article,' *Human Resources Development Quarterly*, 7, 1, 23–25.
- Lechner, M. (2000), 'An Evaluation of Public-Sector-sponsored Continuous Vocational Training Programs in East Germany,' *The Journal of Human Resources*, 35, 2, 347–375.
- Lee, S.H., and Pershing, J.A. (2002), 'Dimensions and Design Criteria for Developing Training Reactions Evaluations,' *Human Resources Development International*, 5, 2, 175–197.
- Lipari, D. (2002), *Logiche di Azione Formativa nelle Organizzazioni*, Milan: Franco Angeli.
- Mann, S., and Robertson, I.T. (1996), 'What Should Training Evaluations Evaluate?' *Journal of European Industrial Training*, 20, 9, 14–20.
- Mathieu, J.E., Tannenbaum, S.I., and Salas, E. (1992), 'Influence of Individual and Situational Characteristics on Measures of Training Effectiveness,' *The Academy of Management Journal*, 35, 4, 828–847.
- Meyer, J.P., and Allen, N.J. (1997), *Commitment in the Workplace*, Thousand Oaks, CA: Sage.
- Modiano, R. (1994), *La Risorsa Umana*, Milan: Sperling and Kupfer.
- Molenda, M., Pershing, J.R., and Reigeluth, C.M. (1996), 'Designing Instructional Systems,' in *The ASTD Training and Development Handbook: a Guide to Human Resource Development*, ed. R.L. Craig, New York: McGraw-Hill, pp. 266–293.
- Morris, M. (1984), 'The Evaluation of Training,' *ICT*, March/April, 9–16.
- Noe, R.A. (1986), 'Trainees' Attributes and Attitudes: Neglected Influences on Training Effectiveness,' *The Academy of Management Review*, 11, 4, 736–749.
- North, R.F.J., Strain, D.L., and Abbott, L. (2000), 'Training Teachers in Computer-based Management Information Systems,' *Journal of Computed Assisted Learning*, 16, 1, 27–40.
- Nunnally, J.C. (1970), *Introduction to Psychological Measurement*, New York: McGraw-Hill.
- Olsen, J.H. (1998), 'The Evaluation and Enhancement of Training Transfer,' *International Journal of Training and Development*, 2, 1, 61–75.
- Owens, P.L. (2006), 'One More Reason Not to Cut Your Training Budget: The Relationship between Training and Organizational Outcomes,' *Public Personnel Management*, 35, 2, 163–172.
- Patrick, J. (2000), 'Training,' in *Introduction to Work and Organizational Psychology: a European Perspective*, ed. N. Chmiel, Oxford: Blackwell Publishing, pp. 100–124.
- Phillips, J.J. (1993), *Evaluation*, London: Library Association.
- Plant, R.A., and Ryan, R.J. (1992), 'Training Evaluation: A Procedure for Validating an Organization's Investment in Training,' *Journal of European Industrial Training*, 16, 10, 22–31.
- Quaglino, G.P. (2003), *Scritti di Formazione 1978–1998*, Milan: Franco Angeli.
- Rebora, G. (2005), 'Valutare e Misurare i Risultati della Funzione Risorse Umane,' in *Pianificazione, Budget e Risorse Umane: Strumenti per l'Economicità della Gestione del Personale*, ed. G. Rebora, Milan: Franco Angeli, pp. 134–150.
- Rhoades, L., and Eisenberger, R. (2002), 'Perceived Organizational Support: A Review of the Literature,' *Journal of Applied Psychology*, 87, 698–714.
- Sebastiano, A., and Bellet, I. (2005), 'Sviluppo Professionale Continuo nelle Aziende Sanitarie: Criticità del Processo Formativo,' *Sanità Pubblica e Privata*, 2, 29–39.

- Shelton, S., and Alliger, G. (1993), 'Who's Afraid of Level 4 Evaluation? A Practical Approach,' *Training & Development*, June, 43–46.
- Steiner, D.D., Dobbins, G.H., and Trahan, W.A. (1991), 'The Trainer-Trainee Interaction: An Attributional Model of Training,' *Journal of Organizational Behavior*, 12, 4, 271–286.
- Swanson, R.A., and Sleezer, C.M. (1987), 'Training Effectiveness Evaluation,' *Journal of European Industrial Training*, 11, 4, 7–16.
- Talbot, C. (1992), 'Evaluation and Validation: A Mixed Approach,' *Journal of European Industrial Training*, 16, 5, 26–32.
- Tannenbaum, S.I., and Woods, S.B. (1992), 'Determining a Strategy for Evaluating Training: Operating Within Organizational Constraints,' *Human Resources Planning*, 15, 2, 63–81.
- Toplis, J. (2001), 'Training Evaluations – Reflections on the First Steps,' *Professional News*, 354–367.
- Towler, A.J., and Dipboye, R.L. (2001), 'Effects of Trainer Expressiveness, Organization, and Trainee Goal Orientation on Training Outcomes,' *Journal of Applied Psychology*, 86, 4, 664–673.
- Tracey, J.B., Hinkin, T.R., Tannenbaum, S., and Mathieu, J.E. (2001), 'The Influence of Individual Characteristics and the Work Environment on Varying Levels of Training Outcomes,' *Human Resources Development Quarterly*, 12, 1, 5–22.
- Tyler, K. (2002), 'Evaluating Evaluations,' *HR Magazine*, June, 85–93.
- Van Buren, M.E., and Erskine, W. (2002), *The 2002 ASTD State of the Industry Report*, Alexandria, VA: American Society of Training and Development.
- Wanous, J.P., and Reichers, A.E. (1997), 'How Good Are Single-item Measures?,' *Journal of Applied Psychology*, 82, 2, 247–252.
- Warr, P., and Bunce, D. (1995), 'Trainee Characteristics and the Outcomes of Open Learning,' *Personnel Psychology*, 48, 347–374.
- Warr, P., Allan, C., and Birdi, K. (1999), 'Predicting Three Levels of Training Outcome,' *Journal of Occupational and Organizational Psychology*, 72, 351–375.
- Warr, P., Bird, M., and Rackham, N. (1970), *Evaluation of Management Training: a Practical Framework, with Cases, for Evaluating Training Needs and Results*, London: Gower.
- Webster, J., and Martocchio, J.J. (1995), 'The Differential Effects of Software Training Previews on Training Outcomes,' *Journal of Management*, 21, 4, 757–787.

Copyright of International Journal of Human Resource Management is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.